

1       Amendments to the Claims:

2       This listing of claims will replace all prior versions, and  
3       listings, of claims in the application using (Original) (Currently  
4       Amended) (New) (Canceled) (Previously Presented) nomenclature, as  
5       recited in the below listing of claims.

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7       1. (Currently Amended) A sensor for sensing the presence of a  
8       chemical vapor, the sensor adapted for interconnecting to an  
9       electrical monitor for measuring a reaction of the sensor to the  
10      chemical vapor, the sensor comprising,

11       a positive terminal, the positive terminal being conductive,  
12       a negative terminal, the negative terminal being conductive, the  
13      terminals adapted for interconnection to the electrical monitor,  
14      and

15       a film of organic conductive polymer nanofibers extending  
16      between the positive and negative terminal for producing a change  
17      in conductivity between the positive terminal and the negative  
18      terminal as monitored by the electrical monitor when the film is  
19      exposed to the chemical vapor, the conductive polymer nanofibers  
20      consist of a single polymer.

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22       2. (Original) The sensor of claim 1 wherein,  
23       the positive terminal and the negative terminal are made of  
24      gold.

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1       3. (Original) The sensor of claim 1 wherein the positive terminal  
2 and the negative terminal are made of gold and the conducting  
3 polymer is polyaniline, the sensor further comprising,  
4       a thiol surface layer disposed between the terminals and the  
5 film.

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7       4. (Currently Amended) The sensor of claim 1 wherein,  
8       the polymer nanofibers are selected from the group consisting of  
9 polyaniline nanofibers, polypyrrole nanofibers, polythiophene  
10 nanofibers, polytoluidine nanofibers, polyanisidine nanofibers,  
11 polymethylaniline nanofibers, polyethylaniline nanofibers, poly(2-  
12 alkoxyanilines) nanofibers and poly(2,5-dialkoxyanilines)  
13 nanofibers.

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15       5. (Original) The sensor of claim 1 wherein,  
16       the polymer nanofibers are polyaniline nanofibers, and  
17       the chemical vapor is selected from the group consisting of an  
18 acid vapor and a basic vapor.

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20       6. (Original) The sensor of claim 1 wherein,  
21       the polymer nanofibers have diameters less than 500 nm and  
22 lengths less than 10  $\mu\text{m}$ .

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24       7. (Original) The sensor of claim 1 wherein,  
25       the polymer nanofibers are polyaniline nanofibers having  
26 diameters less than 500 nm and lengths less than 10  $\mu\text{m}$ .

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1       8. (Original) The sensor of claim 1 wherein,  
2                  the polymer nanofibers are polyaniline nanofibers having  
3                  distributed diameters of 50 nm.

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5       9. (Original) The sensor of claim 1 wherein,  
6                  the polymer nanofibers are polyaniline nanofibers having  
7                  distributed diameters of 30 nm.

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9       10. (Original) The sensor of claim 1 wherein,  
10                 the polymer nanofibers are polyaniline nanofibers having  
11                 distributed diameters of 120 nm.

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1       11. (New) A sensor for sensing the presence of a chemical vapor,  
2       the sensor adapted for interconnecting to an electrical monitor for  
3       measuring a reaction of the sensor to the chemical vapor, the  
4       sensor comprising,

5              a positive terminal, the positive terminal being conductive,

6              a negative terminal, the negative terminal being conductive, the  
7       terminals adapted for interconnection to the electrical monitor,  
8       and

9              a film of organic conductive polymer nanofibers extending  
10      between the positive and negative terminal for producing a change  
11      in conductivity between the positive terminal and the negative  
12      terminal as monitored by the electrical monitor when the film is  
13      exposed to the chemical vapor,

14              wherein the positive terminal and the negative terminal are made  
15      of gold and the conducting polymer is polyaniline, the sensor  
16      further comprising,

17              a thiol surface layer disposed between the terminals and the  
18      film.

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20       12. (New) The sensor of claim 1 wherein,

21              the nanofibers have a diameter of less than 500 nm.

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